

REMARKS

Claims 1 to 27 are pending in the case. The Examiner's reconsideration of the rejection is respectfully requested in view of the amendment and remarks.

Claims 1 to 25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga, U.S. Patent No. 6,346,940. The Examiner stated essentially that Fukunaga teaches or suggests all the limitations of claims 1 to 25.

Claim 1 claims, *inter alia*, "augmenting the real view with a rendering of the graphics guide such that a transparency of at least one portion of the graphics guide is modulated in and out of an augmented view repeatedly over a predefined time interval, independent of a change in a view of the graphics guide." Claim 13 recites, *inter alia*, "a rendering device for augmenting the real view with a rendering of the graphics guide such that a transparency of at least one portion of the graphics guide is modulated in and out of an augmented view repeatedly over a predefined time interval, independent of a change in a view of the graphics guide."

Fukunaga teaches that a guiding marker preparation unit forms guiding markers (see col. 7, lines 65 to col. 8 line 3). Fukunaga does not teach or suggest "augmenting the real view with a rendering of the graphics guide" as claimed in claims 1 and 13. Fukunaga teaches an image processing system installed adjoining an electronic endoscope system (see col. 5, lines 30-35). Image processing system views are shown on a display unit while views from the electronic endoscope are shown on a monitor (see Figure 3). Fukunaga does not teach or suggest an augmenting the real view with a rendering of the graphics guide, essentially as claimed in claims 1 and 13.

Claims 1 and 13 are believed to be allowable for additional reasons. Fukunaga teaches that a degree of transparency of the endoscopic image A_i is preset, but may be adjusted by an operator (see col. 11, lines 44-49). Fukunaga does not teach or suggest "that a transparency of at least one portion of the graphics guide is modulated in and out of an augmented view repeatedly over a predefined time interval, independent of a change in a view of the graphics guide" as claimed in claims 1 and 13. As the Examiner has suggested with respect to claim 3, Fukunaga fails to teach or suggest a transparent guide marker. Fukunaga treats the guiding markers separately from the endoscopic image

Ai. Fukunaga teaches that guiding markers are placed on the endoscopic image Ai (see for example, col. 18, line 38 to col. 19, line 60). The transparency of the endoscopic image Ai is set before the guiding markers are placed (see col. 19, lines 30-35). Thus, Fukunaga does not teach or suggest transparent guiding markers. Indeed, Fukunaga fails to teach or suggest that anything other than certain endoscopic images (e.g., images Hi as shown in Figure 15a) may be semitransparent.

Further, nowhere does Fukunaga teach or suggest that a level of transparency is modulated in and out of an augmented view repeatedly over a predefined time interval. Fukunaga teaches that a degree of transparency of the endoscopic image Ai is preset, but may be adjusted by an operator (see col. 11, lines 44-49). The manual adjustment by an operator is not performed over a predefined time interval. While Fukunaga teaches a playback of a recorded path history, a mere recording of the path history does not teach or suggest that an operator modulated the transparency of the endoscopic image in an out repeatedly. There is no teaching or suggestion in Fukunaga of modulating a transparency over a predefined time period, much less modulating a guide marker transparency over a predefined time.

Fukunaga fails to teach or suggest an augmented view, a transparent guide marker, a predefined time interval, and modulation of guide marker transparency over a predefined time interval. In light of Fukunaga's deficiencies, one of ordinary skill in the art would not be lead to augmenting the real view with a rendering of the graphics guide such that a transparency of at least one portion of the graphics guide is modulated in and out of an augmented view repeatedly over a predefined time interval, essentially as claimed in claims 1 and 13. Therefore, Fukunaga fails to teach or suggest all the limitations of claims 1 and 13.

Claims 2 to 12 depend from claim 1. Claims 14 to 24 depend from claim 13. The dependent claims are believed to be allowable for at least the reasons given for claims 1 and 13. At least claims 2-4, 8, 9, 11, 12, 14-16, 20, 21, 23, and 24 are believed to be allowable for additional reasons.

Claims 2-3 and 14-15 claim, *inter alia*, "a substantially unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument." Claims 4 and 16 claims, *inter alia*, "a substantially unobstructed view

through each of the plurality of portions to at least a portion of the instrument.” Claims 8, 9, 20 and 21 recite, *inter alia*, “the instrument is substantially unobstructed when viewed through portions of the line.” Claims 11, 12, 23 and 24 claim, *inter alia*, “the instrument is substantially unobstructed when viewed through the portions of the cylinder.”

Fukunaga teaches that an endoscope image preparation unit can become transparent by thinning the pixels based on a preset degree of transparency (see Col. 11, lines 44 to 48). However, Fukunaga does not teach providing “a substantially unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument”, as claimed in claims 2, 3, 14 and 15, and essentially as claimed in claims 4, 8, 9, 11, 12, 16, 20, 21, 23, and 24. Fukunaga teaches that within a display for showing the recorded path, the indicator image Ci showing a state of the endoscope and the endoscope image Ai showing a three-dimensional model including guide markers are shown in different windows (see Figure 10 and col. 10, lines 54-64). Assuming *arguendo* that the indicator image Ci is a view of an instrument, Fukunaga could not show a view of the instrument through the guide markers because Fukunaga teaches that the guide markers are shown in a completely separate window from the indicator image. Therefore, Fukunaga fails to teach or suggest an “unobstructed view through the at least one portion of the graphics guide to at least a portion of the instrument”, as claimed in claims 2, 3, 14 and 15, and essentially as claimed in claims 4, 8, 9, 11, 12, 16, 20, 21, 23, and 24. Therefore, Fukunaga fails to teach or suggest every limitation of claims 2-4, 8, 9, 11-12, 14, 16, 20, 21, 23, and 24.

Referring to claim 25, rejected for the rational given for claim 2: Claim 25 recites, *inter alia*, “augmenting the real view with a rendering of the virtual view of the endoscopic instrument and the graphics guide in the real view such that an appearance of at least one portion of the graphics guide is modulated with respect to at least one of space and time, wherein said rendering comprises varying a transparency of the at least one portion of the graphics guide with respect to other portions of the graphics guide to provide a substantially unobstructed view through the at least one portion of the graphics guide to at least the portion of the virtual view of the endoscopic instrument.”

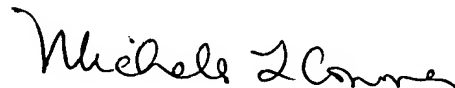
Fukunaga teaches that an endoscope image preparation unit can become transparent by thinning the pixels based on a preset degree of transparency. (See Col. 11,

lines 44 to 48.) However, Fukunaga does not teach providing “augmenting the real view with a rendering of the virtual view of the endoscopic instrument and the graphics guide in the real view”, as claimed in claim 25. Fukunaga teaches that graphics guides are added to prerecorded stock views (see col. 6, lines 12-15). The real view of Fukunaga is shown in a separate display from a virtual view (see Figure 3 and col. 5, lines 30-35). Therefore, Fukunaga does not teach augmenting the real view. Fukunaga does not teach “augmenting the real view with a rendering of the virtual view of the endoscopic instrument and the graphics guide in the real view” as claimed in claims 25. Therefore, Fukunaga fails to teach or suggest every limitation of claim 25.

New claims 26 and 27 depend from claims 1 and 13, respectively. The dependent claims are believed to be allowable for at least the reasons given from the independent claims.

For the forgoing reasons, the present application, including claims 1 to 27, is believed to be in condition for allowance. The Examiner’s early and favorable action is respectfully urged.

Respectfully Submitted,



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Michele L. Conover

Reg. No. 34,962

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, New Jersey 08830
(732) 321-3013